Classic E.O.S.

User manual

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Table of contents

Chapter 1: Introducing the Classic E.O.S. 5

Welcome to the Classic E.O.S. 6
Safety precautions 7
Safety compliance 8
The control panel 9
Switching the Classic E.O.S. on 12
Switching the Classic E.O.S. off 14

Chapter 2: Basic operation 15

Processing films 16
Processing an emergency film 19

Chapter 3: Advanced operation 21

Recommended chemicals 22
Customization 23
Survey of the preventive maintenance work 24
Troubleshooting checklist 26

Appendix A: Equipment information sheet 29

Specifications 30
Accessories 34

Chapter 1

Introducing the Classic E.O.S.

This chapter introduces the Classic E.O.S. to the user and draws the attention to some important safety precautions.

- Welcome to the Classic E.O.S.
- Safety precautions
- Safety compliance
- The control panel
- Switching the Classic E.O.S. on
- Switching the Classic E.O.S. off

Welcome to the Classic E.O.S.

The Classic E.O.S. is a processor for medical X-ray films developed by Agfa. The Classic E.O.S. cannot process rollfilms.

The Classic E.O.S. offers the following features:

- Three fast processing cycles for optimal processing quality in accordance with the film type that is used: High Throughput (HT), Intermediate Processing (IP) and Rapid Processing (RP).
- Operation of the processor can be completely customized by means of the following processing parameters:
  - developer temperature,
  - dryer stage,
  - developer replenishment rate,
  - fixer replenishment rate,
  - jog-cycle function (standby developer and fixer replenishment),
  - initial developer and fixer replenishment function.
- The Classic E.O.S. ('Ecological Optimized System') features a twin fixer tank system which reduces substantially the silver carry-over to the rinse water tank.
  - After development, the exposed film enters the first fixer tank, where most of the silver is removed from the film.
  - The film then is transported through the second fixer tank, to be treated again with fresh fixer.
  - As a consequence, when the film is passed to the rinse water tank, silver freight carry-over will be very low.

❖ *Agfa can guarantee optimal film quality and compliance with statutory regulations only if Agfa materials are used.*

Safety precautions

General safety instructions

- The Classic E.O.S. was designed for processing medical X-ray films, and should only be used for this purpose.
- The processor may only be operated by qualified staff, skilled on the machine.
- Make sure that only by Agfa authorized personnel has access to the processor.
- Only trained and authorized service personnel can make repairs or changes to the processor.
- If there is visible damage to the machine casing, the processor should not be started or used.
- Do not override or disconnect the integrated safety features.
- Disconnect the processor from the mains before performing any maintenance activities.
- Like all technical devices, the processor must be operated, cared for and serviced correctly, as described in the documentation provided with the machine.
- If the processor is not operated correctly or if you do not have it serviced correctly, Agfa is not liable for resulting disturbances, damages or injuries.
- When installing the processor, care must be taken to ensure that there is either a mains plug or an all-cable disconnecting device in the internal installation fitted near the processor and that it is easily accessible.
- If connections with other components or assemblies are made, Agfa can guarantee safety only for combinations which are approved by Agfa.
- If you notice conspicuous smoke or noise, disconnect the processor immediately.

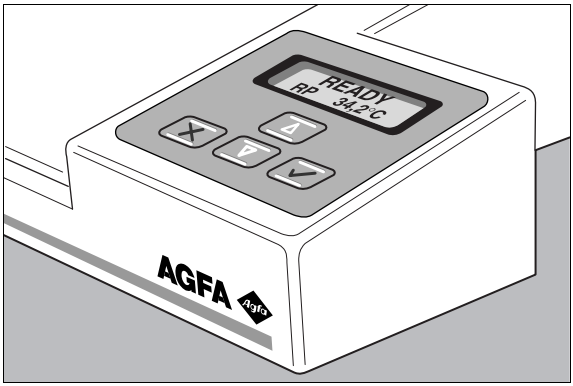
Special instructions for the handling of chemicals

- When handling chemicals, you must observe safety and environmental regulations as well as the operating and warning instructions accompanying the chemicals.
- Wear stipulated protective clothing and safety goggles.
- When disposing of chemicals and waste water, you must comply with the local regulations concerning waste water and environmental protection.
- If chemicals get into your eyes, immediately rinse your eyes with cold water and consult a physician.
- Do not inhale vapor from chemicals. Make sure that there is sufficient ventilation where the processor is installed, i.e. air exchange that is at least ten times the space volume per hour.
- Always comply with the installation instructions.
- Regularly check all connections to the processor for tightness.
- If liquid gets into the inside of the processor (due to spills), disconnect the processor from the mains immediately and have the device cleaned thoroughly by service personnel.

Safety compliance

- This processor complies with the safety regulations EN 60950: 1997 (IEC 950) and EN 60601-1-2: 1993, UL 1950 and CSA C22.2 No. 950 and with the regulations on radio interference suppression EN 50081-1, EN 55011 and FCC 47 Part 15, Subchapter B, Class A.
- The non-return water connection system complies with DIN 1988.

The control panel

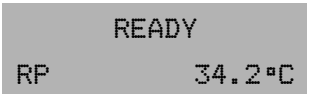


Control panel keys

Key	Key description	Action
	Up key.	• To scroll upward through multiple choices in a field.
	Down key.	• To scroll downward through multiple choices in a field.
	Escape key.	• To quit a submenu without saving any changes.
	Confirm key.	• To select a menu item.

Control panel display

The LCD display of the control panel consists of two lines of 16 digits, located above the keys on the control panel.



or, e.g.:

The display keeps the user informed on the status of the processor, e.g. when failures occur by showing an appropriate message.

Refer to 'Troubleshooting' on page 73 of the Classic E.O.S. Reference manual.

Audio signals

The Classic E.O.S. also informs you about its status by means of beeps. The length of the beep indicates the system's response to a key command.

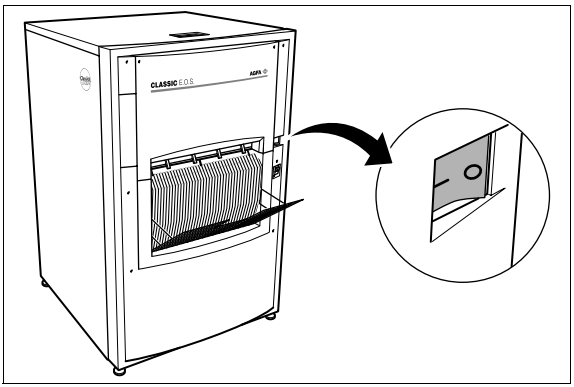
- A **short** beep means that Classic E.O.S. accepts the command and begins the operation.
- A **long** beep signifies that the Classic E.O.S. rejected the command or the action or process failed.
- An **interval** beep accompanies an error status message. *Refer to 'Troubleshooting checklist' on page 26.*

Switching the Classic E.O.S. on

❖ *When operating the processor for the first time, make sure that the processor has been installed in accordance with the Agfa installation instructions.*

1 Locate the main switch and place it in position 'I'.

Do not touch the switches with wet fingers!



The processor starts an initialization procedure that may take 15 to 20 minutes.

During the initialization phase an emergency film can be processed if a film is introduced on the feed table. ***Refer to 'Processing an emergency film' on page 19.***

2 The developer and fixer are heated.

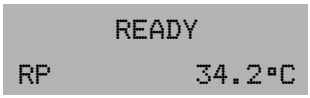
```
Heating
developer
```

or, e.g.:

```
RP          34.2°C
```

You can watch the progress of heating as the temperature indication changes accordingly.

3 After a while, the following message indicates that the processor is ready for operation:



❖ *The actual temperature to be reached depends upon the setting for the actual processing cycle.* *Refer to 'Developer temperature' on page 36 of the Classic E.O.S. Reference manual.*

After switching on

1 Introduce large sheets of blank films (cleaning films), e.g. film size 35x43 cm/ 14x17 inch, when the processor has been on standby for an extended period of time, e.g. overnight, to remove any deposits or residue from the transport path of the film.

2 It might be necessary to initiate an additional developer replenishment, depending on the start-up developer replenishment setting, which can be set ON or OFF.

If set ON, an automatic replenishment is initiated automatically when switching the processor on. *Refer to 'Setting the start-up replenishment function' on page 47 of the Classic E.O.S. Reference manual.*

Switching the Classic E.O.S. off

Before switching off

Verify that no film is being processed before switching off the processor.

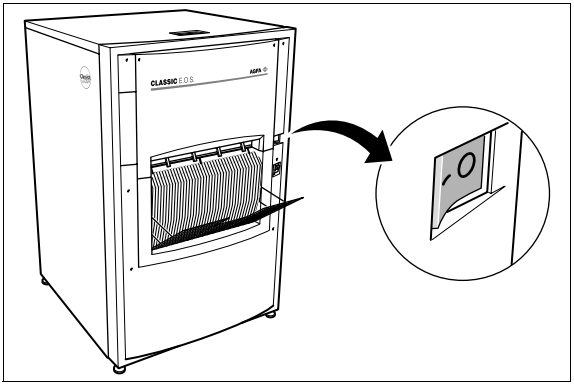
Switching off

It is recommended to switch the processor off:

- when you do not intend to process films for the next couple of hours,
- at the end of the day.

1 Place the main switch in position ‘0’.

Do not touch the switch with wet fingers!



2 The water tank is drained automatically.

If the processor is used continually, the water tank will be drained automatically once per period of twenty-four hours. The default time setting is 02:00 h; the time can be changed by your local service organization. This draining operation takes approx. 8 minutes.

Chapter 2

Basic operation

This chapter holds basic information on how to process films both under normal conditions and in emergency situations.

- Processing films
- Processing an emergency film

Processing films

Processing a film is very easy and straightforward: you just have to place the exposed film on the feed table and feed it into the feed slot of the Classic E.O.S. The Classic E.O.S. will then process the film and deposit it in the exit tray.

The Classic E.O.S. can process all common brands of medical X-ray film suitable for machine processing. You can apply sheet films of the following sizes:

- maximum width: 43.2 cm (17 inch),
- smallest size: 10 x 10 cm.

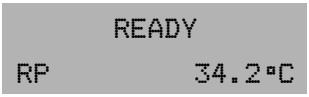
DO NOT process rollfilm on the Classic E.O.S.

Processing under normal conditions

Proceed as follows:

1 Check whether the processor is switched on and ready for operation.

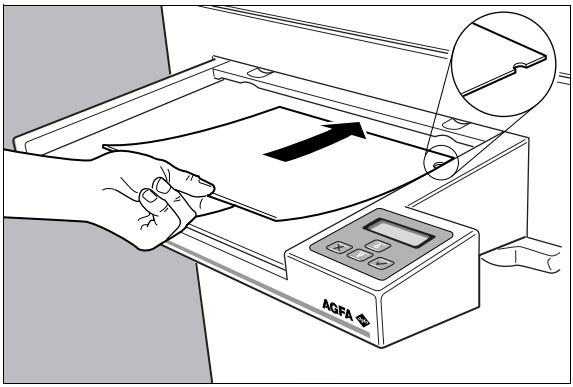
The display should show, for example, the READY message:



Introduce large sheets of blank films (cleaning films), e.g. film size 35 x 43 cm, when the processor has been on standby for an extended period of time, e.g. overnight, to remove any deposits or residue from the transport path of the film.

2 Place the sheet of film to be processed on the feed table.

Make sure that the film edge is aligned with the feed slot.



The processor accepts the film and starts processing it.

The following message is shown:

```
   Please wait
```

3 Wait until you hear a short beep, and the READY status message reappears.

```
      READY
RP          34.2°C
```

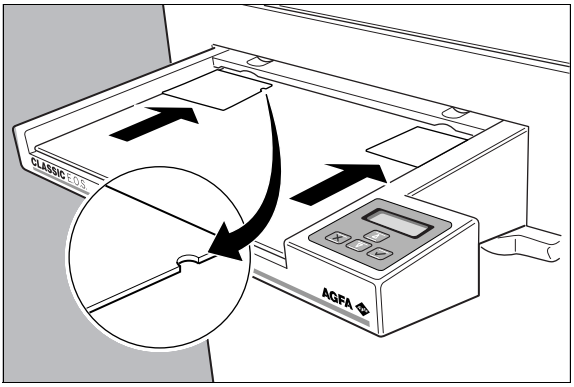
You can now introduce the next film to be processed.

Processing narrow films

You can place narrow films side by side on the feed table to have them processed simultaneously.

However, make sure these films do not overlap.

You can introduce 2 sheets of 10 x 10 cm film simultaneously as shown below.



DO NOT process roll film on the Classic E.O.S.

Processing an emergency film

It may happen that you have one or more films to process at a time when the Classic E.O.S. is not completely ready for operation. This can be e.g.:

- when the Classic E.O.S. is initializing and the developer has not yet reached the set temperature,
- when an error status message is displayed.

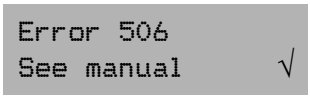
Still, the Classic E.O.S. enables you to process films in these conditions. Films thus processed are referred to as 'emergency films'.

Emergency films do not always meet the quality standards of development, rinsing or fixing. In addition, the archivibility of films thus processed is not always guaranteed. Under particular circumstances, the film might be useless to make a proper diagnosis!

Proceed as follows to process emergency films:

1 Check the display.

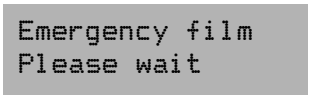
❖ *Caution: emergency film processing is not possible if, e.g., the following message appears:*



Refer to 'Emergency film processing' on page 75 of the Classic E.O.S. Reference manual.

2 Place the emergency film to be processed on the feed table.

The processor accepts the film automatically and displays the following message on the control panel:



3 Wait until you hear a short beep.

You can now introduce the next emergency film to be processed.

Chapter 3

Advanced operation

This chapter gives an overview of functions for the advanced user:

- Recommended chemicals
- Customization
- Survey of the preventive maintenance work
- Troubleshooting checklist

Recommended chemicals

The tables below list the recommended chemicals, as a function of the processing cycle, temperature level and the replenishment quantity.

Chemicals	Developer and fixer temperature		
	HT	IP	RP
Developer G 138 i	38 °C	37 °C	34 °C
Fixer G 334 i/ G 338	34 °C	34 °C	34 °C

Chemicals	Replenishment quantity
	HT / IP / RP
Developer G 138 i	400 ml/m^2
Fixer G 334 i/ G 338	400 ml/m^2

The replenishment quantities as listed in the above table are valid only if your film consumption exceeds 5 m^2 film/day and is based on a regular daily use. If your daily film consumption is lower, you can initiate a chemical jog cycle, which provides additional replenishment rates that compensate for low film usage.

When handling chemicals, make sure to take notice of the warning instructions on the packing material. ***Refer to 'Special instructions for the handling of chemicals' on page 8.***

Refer to 'Customization' on page 29 of the Classic E.O.S. Reference manual.

Customization

Overview of recommended settings

The table below lists the recommendations for optimal processing stability, depending on your specific workload.

Developer replenishment rate					
more than 5 m² film/day		3 to 5 m² film/day		less than 3 m² film/day	
daily use	irregular use	daily use	irregular use	daily use	irregular use
400 ml/m²	400 ml/m²	600 ml/m²	600 ml/m²	600 ml/m²	600 ml/m²
Standby developer and fixer replenishment - jog cycle (*)					
more than 5 m² film/day		3 to 5 m² film/day		less than 3 m² film/day	
daily use	irregular use	daily use	irregular use	daily use	irregular use
OFF	OFF	OFF	OFF	ON	ON
Start-up replenishment function					
more than 5 m² film/day		3 to 5 m² film/day		less than 3 m² film/day	
daily use	irregular use	daily use	irregular use	daily use	irregular use
OFF	ON	OFF	ON	OFF	ON

(*) The default setting is AUTO: the developer and fixer jog cycle is set automatically ON if the daily film consumption is less than 3 m². It is set automatically OFF if the daily film consumption is more than 3 m².

Refer to 'Customization' on page 29 of the Classic E.O.S. Reference manual.

Survey of the preventive maintenance work

Preventive maintenance and cleaning of the Classic E.O.S. at regular intervals will keep the Classic E.O.S. running smoothly and ensure optimum processing quality.

Maintenance table

A survey of this cleaning and maintenance work is listed in the table below. The procedures themselves are explained in detail in the Classic E.O.S. Reference manual (page references).

Interval	Maintenance work	Page
Daily	Clean the feed table.	*54*
	If possible, switch the Classic E.O.S. off overnight.	*20*
Weekly	Clean the tank covers and film guide elements.	*56*
Monthly	Check the ground fault switch.	
Every three months	Clean the tanks and roller sets.	*59*
	Clean the squeegee roller set.	*66*
	Clean the pumps.	*68*
	Clean the dryer roller sets. Procedure for skilled service personnel only.	*97*
Every six months	Clean the water filter. Procedure for skilled service personnel only.	*104*
Yearly	Have the rack bearings and gears checked by your local service organization.	
Ad hoc	Clean the film scanner.	*54*
	Have the replenishment settings checked by your local service organization.	
	Have the rack bearings and gears checked by your local service organization.	

If you do not comply with the above-mentioned maintenance instructions, there might be a loss of photographic quality. If the processor is not maintained correctly, the proper functioning and the safe operation of the machine are no longer guaranteed.

Refer to 'Advanced operation' on page 21 of the Classic E.O.S. Reference manual.

Maintenance message

The Classic E.O.S. must be checked and serviced periodically by your local service organization (default period: every six months).

If the following maintenance message is displayed, you must call your local service organization.

Please wait	alternating with	Maintenance

❖ *The message will continue to appear at start of work when processing the first four films of the day, until service takes place.*

⚠ ***When not complying with the above-mentioned maintenance instructions, there might be a loss of photographic quality. If the processor is not maintained correctly, the proper functioning and the safe operation of the machine are no longer guaranteed.***

Troubleshooting checklist

A survey of possible faults is listed in the table below. The troubleshooting procedures are explained in detail in the Classic E.O.S. Reference manual (page references).

Error status	Refer to	Page
You try to feed a film but it is not accepted.	The processor is out of operation.	*77*
Message ‘Developer level low’ or ‘Fixer level low’.	The developer or fixer level is too low.	*79*
Message ‘Water level low’.	The water level is too low.	*84*
An accepted film is not deposited in the exit tray.	Jammed film.	*85*
The processed film is still moist, or is deformed or shows drying patterns.	Film quality problems.	*87*
Message ‘Check water pump’.	Clean the water pump. If that does not help, contact your local service organization.	*68*
‘Error 502 - See manual’ message.	The developer temperature is too low.	*88*
‘Error 504 - See manual’ message.	The fixer temperature is too low.	*90*
‘Error 514 - See manual’ message.	Clean the pumps (Developer - Fixer 1 - Fixer 2). If that does not help, contact your local service organization.	*68*
‘Error 505 - See manual’ message.	Failure of the dryer heaters. Procedure for skilled service personnel only.	*101*
‘Error 501’, ‘Error 503’, ‘Error 510’, ‘Error 506’ and other ‘Error XXX’ messages.	Contact your local service organization.	
Messages when accessories are connected.		*92*

An interval beep accompanies the messages.

❖ *You can interrupt the beeping by pressing the confirm key.*

Refer to 'Troubleshooting' on page 73 of the Classic E.O.S. Reference manual.

Appendix A

Equipment information sheet

Specifications

Product description	
Type of product	Medical film processor
Commercial name	Classic E.O.S.
Model number	5270/xxx
Original seller/manufacturer	Agfa-Gevaert NV-Mortsel
Labelling	
CE	93/42 EEC ‘Medical Devices’ (Europe)
TÜV-Certification Mark	EN 60950
c-UL-us-Listing Mark	UL 1950, CSA 22.2 No. 950 (US/CAN)
Dimensions	
Length, feed table and receiving tray excluded	740 mm
Length, feed table and receiving tray included	1270 mm
Width	710 mm
Height	1130 mm
Weight	
Empty	ca 135 kg
With filled tanks	ca 165 kg
Materials	
Equipment does not contain:	CFC or HCFC, asbestos, PCB or PCT, mercury, cadmium, lead as additive to plastic
Plastic parts > 50 g	marked according to ISO 11469

Electrical connection	
Operating voltage	200 - 240 V
Mains fuse protection	15/16 A
Mains frequency	50/60 Hz
Power consumption	
Standby (room temperature ~ 20 °C)	0.25 kWh
During film processing	2.1 kWh (max. 3.45 kWh)
Environmental conditions	
Relative humidity	10 % - 80 %
Room temperature (without cooling system)	10 °C - 30 °C
Room temperature (with cooling system)	10 °C - 35 °C
Recommended consumables	
Developer	G 138 i
Fixer	G 334 i/G 338
Film	all Agfa medical X-ray films
Water	tap water
Tank volumes (with roller sets inserted)	
Developer tank	ca 8.8 l
Fixer tank 1	ca 10 l
Fixer tank 2	ca 5.8 l
Water tank	ca 5.8 l
Developer temperatures (default values upon installation)	
RP processing cycle	34 °C
IP processing cycle	37 °C
HT processing cycle	38 °C

Fixer temperatures	
Fixer tank 1	Not regulated
Fixer tank 2	34 °C in all processing cycles
Replenishment rates (default values upon installation)	
Developer	400 ml/m^2 at > 5 m^2 film/day
Fixer tank 2	400 ml/m^2 at > 5 m^2 film/day
Film characteristics	
Smallest film size	10 x 10 cm
Max. film width	435 mm
Roll film	Not possible
Water supply	
Compliant with DVGW	DIN 1988 Teil 4/1988 (Germany)
Water temperature	min. 5 °C; max. 5 °C under set developer temperature
Water pressure	2 - 6 bar
pH	6.5 - 8
Minimum conductivity	min.: 3 µS/cm
Water consumption	
During film processing	max. 3 l/min
Water consumption can be adjusted by your local service organization: between 3 l/m² and 30 l/m² (in steps of 1 l/m²)	
Standby	0 l/min

Physical emissions	
Noise emission (sound power level according to ISO 7779)	
• During film processing	max. 48 dB(A)
• Standby	max. 35 dB(A)
Radio frequency emission	according to CE requirement
Heat emission	
• During film processing	total: 7560 kJ/h; into the room: 3240 kJ/h
• Standby	total: 900 kJ/h; into the room: 900 kJ/h
Chemical emissions (equipment & consumables)	
Depending on processing conditions, and type of chemicals; in direct surroundings of equipment, when using recommended chemicals, and if installed according to instructions	
SO_2 (sulfur dioxide)	below TLV values
CH_3COOH (acetic acid)	below TLV values
Process data (throughput for 35x35 cm sized films)	
RP processing cycle	110 films/hour
IP processing cycle	150 films/hour
HT processing cycle	220 films/hour
End of Life	
Estimated product life (if regularly serviced and maintained according to AGFA instructions)	7 yrs.

Accessories

- Anti-algae kit.
- Water pressure reduction.
- Replenishment tanks 2 x 30 l.
- Replenishment tanks 2 x 80 l.
- E.O.S. Fix.
- Chemix.

CE

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